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Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY
THEATRICAL • TELEVISION • 16mm COMMERCIAL • AMATEUR



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**THIS
MONTH**

- Color Correction — What It Means
- Integrating Film and Live Action for TV
- Shooting Home Movie Interiors

**SEPTEMBER
1951**

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ON THE COVER

TWENTIETH CENTURY FOX enters scene, under direction of Charles G. Clark, A.S.C., makes a dolly shot in the wilds of Montana during scenic location filming of scenes for "Red Snow Of Montana"—scene of parachuting horse-fair fighters—Photo by Anthony Upton

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Hollywood Bulletin Board

September 15 is date American Society of Cinematographers will hold its members and their wives at annual "Ladies Night Dinner and Dance." Function this year will be a super Hawaiian luau to be held in gardens of A.S.C. clubhouse in Hollywood. Cooperating this year with Fred W. Jackman and his program committee is Eddie Blackburn of J. E. Bralstear, Inc., a regular among frequent visitors to Hawaii, who will lend his knowledge of the islands' food and festivities in the planning of the A.S.C.'s big annual event.

Joseph Walker, A.S.C., is slated to direct the photography of Judy Holliday's second starring picture for Columbia Pictures, set to start early in September. Meanwhile, Walker has been active with the production of his Electro-Zoom lenses for TV cameras, which are now in regular use in major TV studios across the nation.

I. Rosenberg, Brazilian cinematographer and film producer, was a Hollywood visitor last month. Rosenberg, who produces short subjects and newsreels for Brazil theaters and photographs documentary films for the Brazilian government, has been studying Hollywood production methods with the object of re-organizing and expanding his produc-

Columbia, Warner Brothers, Walt Disney and Paramount studios.

Upon his return to Rio de Janeiro, Rosenberg plans to launch his first color film production, using Anisco Color.



Tony Gaudin

Gaudin (Tony) Gaudin, pioneer Hollywood cinematographer of more than 1000 films and winner of the 1936 Academy Award for photography, died August 9th at his home in Burlingame, California.

A former member of the American Society of Cinematographers, he served as its president from 1924 to 1925. Gaudin came to the U. S. from his native Italy in 1906 to head the old Vitaphone company's film lab in New York City. He went to Hollywood in 1911 to reorganize the camera department for Universal Pictures. He subsequently moved over to Warner Brothers studios where he photographed the studio's top stars, including Bette Davis and Greta Garbo.

Gaudin is survived by his wife, Marie, and two sons—Frank, also a cinematographer, and Antonio, a San Francisco lawyer.

John Arnold, A.S.C., head of MGM's camera department, and who has been carrying on extensive research with a new type of studio lamp for reflected light, has several of the units in use on MGM sound stages at the present time. But advantage of lamp's use, says Arnold, is elimination of sharp shadow defini-



I. ROSENBERG, Brazilian cinematographer (right), stands with director of photography Henry Curtiss, A.S.C., on set of U-I's "Sea Of Cortez."

ing company. While in Hollywood he observed cinematographic methods at Universal, Metro Goldwyn Mayer,

non. Lutz received its initial test on MGM's "Rain, Rain Go Away," soon to be released.

The photography of "A Place In The Sun," Paramount production directed by George Stevens, former cameraman, and photographed by William Meller, A.S.C., is garnering accolades wherever it is shown. Looks like a good bet for one or more Academy Award nominations.

Karl Freund, A.S.C., this month, announces a greatly expanded program for his Photo Research Corporation in Burbank, Calif. Until now exclusively a manufacturer of technical photographic equipment, including the well-known Spectra color temperature meter, Freund's company will now act as west coast sales distributor for several important camera manufacturers, including Camera Equipment Company, Precision Laboratories, and others.

Harry Strindberg, A.S.C., lost an opportunity to win a Venice Film Festival award for the photography of "Breathless Named Desire," last month when that picture was withdrawn from competition as result of what was reportedly "pressure by American censor groups." Picture, as yet unreleased in America, is a superior job of cinematography.

"Precision shots, track photography, stunt work and other such production secrets should not be shared with the general public," declared the Perlberg-Sennan Company last month, when it ticked "No Visions" signs on its sound stages at Paramount. Besides lessening interference with production, the company feels that the ban is a safety measure, stating that Hollywood too long has been giving away its secrets—spoiling its illusions.

R.K.O. Studio has joined the march in converting from photo to magnetic sound. Company has completed installation in its dubbing rooms of latest RCA magnetic recording equipment, and has acquired portable recording equipment for use on locations.

John Boyle, A.S.C., drew the first assignment at Warner Brothers for shooting a feature picture using that company's recently developed color process. Title of picture is "Carnegie City," Warner's third Hollywood studio presently developing its own color film process. Others are Metro Goldwyn Mayer and with Century-Fox. The respective systems employ one or the other of presently available color negative films—Anisco or Eastman.

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Out Of This World..!

Unusual photography makes real the jungle and the antediluvian monsters of "Lost Continent," Lippert Pictures' action-fantasy thriller staged and photographed almost entirely indoors.

By HERB A. LIGHTMAN

SCIENCE-FANTASY films, perhaps more than any other type of picture, depend upon top grade art direction, special effects and photography in order to successfully create an illusion. Judged on this basis, "Lost Continent" measures up as one of the best of the current "out of this world" cycle.

Produced by Lippert Pictures, Inc., "Lost Continent" follows strongly the action-fantasy pattern set by the same studio's phenomenally successful "Rock-erShip X-14." Like its predecessor, "Lost Continent" is rich in apparent production value, the result of careful pre-planning and the shrewd use of elements calculated to give the vehicle scope and authenticity.

Compactly acted and directed, the film owes much of its visual impact to

the production design of F. Paul Sylva, the special effects of Augie Lehman, and the cinematography of Jack Greenhalgh, A.S.C. In fact, it is the photographic treatment more than any other element that lifts "Lost Continent" far above most films of its type. The versatile, mood-filled score by Paul Duxlap—which includes a haunting beguine, a sophisticated piano concerto, and very impressionistic music for a lost world—comes in for the very highest praise as a contributing factor to the overall excellence of the film.

The plot concerns a group of Atomic Energy Commission scientists who launch a 100-foot atom-powered rocket into the stratosphere. When the rocket fails to return, they set out to find it in an Air Force C-47 transport. The plane, rep-

teriously "demagnetized," crashes on a jungle island, where its occupants learn from the natives that the rocket has crashed beyond a forbidden mountain in territory from which "none ever came back."



Alan of cinematographer Greenhalgh was in studio feeling of jungle vastness within limited confines of sound stage. Lens crossed two connecting stages.



JACK GREENHALGH, A.S.C. (left) directed the photography of Lippert Pictures' "Lost Continent." Production was staged and shot on sets erected at Goldwyn Studios, Hollywood. Among him was Ernie Sachs, operator, Benjie Coleman, assistant, and George Strobel, gaffer. Camera not mounted on a crane or dolly but every shot.

The scientists and Air Force men have a series of hair-raising adventures while climbing the mountain, and when they reach the top they find themselves in a weirdly unreal world, said to be a "lost continent" or throwback to a prehistoric age. After bouts with a bromosaurus, a giant pterodactyl, a triceratops and other outsize fauna of the antediluvian age, they find the rocket and manage to detach its recording unit—then flee down the mountainside and into outcigger canons just as a violent earthquake cuts loose and the entire island blows up.

The success of such science fantasy depends upon the creation of appropriately very mood—and Jack Greenhalgh's

photography scores heavily in this department. In discussing the problems involved in photographing the film, Greenhalgh explains: "Our aim was to create a feeling of vastness within the limited confines of the sound stage. Also, we had to give the 'lost continent' sequence a mood of ominous fantasy, while still preserving a strong enough link with reality to convince the audience that these were situations that could and did actually happen to characters in the script."

To enhance this illusion, there was built on the huge stages of the Goldwyn Studios a conventional jungle (pre-



CAMERA was mounted on a huge beam from the pulley at the top with actors as they climbed up face of sheer cliff. By air vapor simulated mountain fog.

erably at the foot of the mountain), a 50-foot rockbound peak scored with caves and chasms, and a ghostly "lost continent" jungle characterized by weird plants and rock formations. These sets covered two connecting stages, and in one sequence the camera pulls back from one stage, through the connecting arch and rises in a boom shot as the party starts up the mountain.

The camera was mounted on a boom throughout much of the filming in order to rise with the actors as they climbed from one level to another up the face of the cliff. Hydraulic light stands that could be mechanically raised and lowered allowed the lights to rise with the camera. In one sequence, these stands made it possible for the lights to be lowered very slowly in order to simulate the effect of the sun going down. In addition, a 25-foot electrically controlled parallel was used to raise the camera and crew to various levels for filming of scenes high up on the mountain peak.



ARC LIGHTING was used primarily throughout the production to produce simulated moonlight and brilliant sunlight. Here, survivors of crashed ocean plane unexpectedly encounter huge prehistoric monster in depths of lost Continent's jungle.

The mountain itself was a masterpiece of construction. Fashioned of materials strong enough to simulate actual rock and support the weight of seven actors clambering upward, it was mounted on rollers so that it could be wheeled around to provide a variety of set-ups and camera angles. It is a tribute to Greenhalgh's lighting skill that the 50-foot sequence of man-made rock could be used as a background for a climb supposedly covering several thousand feet of mountainide. In most cases a shifting of the lights plus a fresh camera angle made a previously photographed segment of terrain appear completely different. Clouds photographed on transparencies were projected on a huge screen behind the rock, creating a realistically hazy sky effect.

In one sequence, the characters climb above the clouds, emerging from the swirling whiteness to find themselves on a high plateau. These clouds were created by filling a huge cage with dry ice and blowing the vapor onto the stage. The scene where one of the scientists falls off the rock and goes plunging through this cloud to his death is executed with jolting realism.

For the climactic sequence of the film, when the scientists are menaced by an earthquake, two huge segments of terrain, complete with moving hills were mounted on rolling platforms and wrenched apart to show the earth splitting open. The camera was shaken at

the same time to complete the effect. A segment of jungle was built around the special effects tank at the Goldwyn Studios to show the scientists taking to canoes just before the island blows up. Palm trees were wired so that they could be made to come crashing down at the water's edge. A compound ordinarily used in swimming pools to control algae was dumped into the tank to give the effect of sea water. The bottom of the pool had previously been painted a deep aqua shade. Machine-made waves completed the illusion.

Arc light was used primarily throughout the film to produce simulated moonlight and sunlight. The ruggedness of this lighting, realistically in key plot requirements, contrasts sharply with the glossy "glamour" lighting of earlier sequences set in the ultra-modern apartment of a streamlined character. Special mention should also be made of the excellent combination of camera and cutting that goes to produce the strikingly realistic plane crash.

"Lost Continent" marks the 212th film photographed by Jack Greenhalgh since he became a Director of Photography in 1935. Having built a reputation for working very rapidly while turning out top quality photography, Greenhalgh explains that the result is mostly a product of proper pre-planning.

"After years of trial and error experience in filming all types of subjects,

(Continued on Page 377)

To Promote The Sale of Chinaware...

... we produced a unique documentary film that shows the process of making English bone china in one of England's oldest porcelain works.

By JOHN R. STEWART, ARPS, MBKS

JUST COMPLETED in England and soon to be shown on screen in the United States is a documentary of more than usual interest. Called "The Doctor Ordered Clay," it tells mainly the story of how English Bone China is made at the 200 year old Worcester Royal Porcelain Works. But it tells a good deal more than that.

Although some of the manufacturing processes, especially perhaps the potter's wheel, are ideal cinema material, china itself is not cinematic. To hold attention throughout a twenty-five minute film was a problem.

Human interest, excitement, humor—these are the ingredients for a successful

film. Fortunately they were all at hand. Founder of the Worcester Royal Porcelain Company in 1751 was a colorful personality—Dr. John Wall—the "Doctor" of the title. A brilliant physician, in the spare time which somehow he found for himself, he painted pictures good enough to be exhibited at the Royal Academy.

Most important moment in the life of Dr. Wall was his meeting with William Davis, Worcester Apothecary. These two men decided to start in Worcester the making of china. This event was re-enacted for our film.

For the exterior of the Apothecary's shop, a genuine old house in Worcester

was stripped of modern attachments such as mail boxes, bell pushers and front door numbers and the name William Davis painted over the window. The interior was reconstructed in the studio, using many genuine antiques as "props," including a 17th-century porcelain snuffbox, valued at 200 guineas, from which Dr. Wall may have got his first ideas on making china.

As a wealthy man, the Doctor inevitably suffered from the attention of highwaymen. Twice he was attacked and robbed when returning home at night after visiting patients. Here was excellent film material, and one of these incidents was re-enacted near to the actual



AUTHOR Stewart, using a Newman-Smith camera, prepares to shoot a scene for "The Doctor Ordered Clay," 25-minute documentary on manufacture of English bone china. Most props used here are genuine antiques.



FILM includes scenes showing detail of the fine hand painting that characterized the decoration of porcelain 150 years ago, and still followed today.



PREPARING to do a tracking shot in the parking department of the Warner Bros. Paradise Walk. Made illumination in four daylight coming through skylight overhead, and suggested by plane lamps



A GENUINE old house in Worcester, England, was modified to represent the shop of an Englishman's factory. Notice the incongruous addition of the "No Parking" sign with the old customer



PREPARING the outdoor set for the "Bull in a China Shop" scene. Running steps afforded use of sunlight for illumination. Photo lamps furnished 100 light.



THE SCENE as it appeared from behind the camera. It was under the same camera as the farm, showing China Shop set there, then bringing bull into city studio. The china and its scenes were "rejoice"

spot where it took place 200 years ago.

But the present day has its exciting moments too. Men have long talked of "a bull in a china shop" to describe somebody creating havoc and chaos. For "The Doctor Ordered Clay" it was determined to find out what would really happen if a bull were turned loose in a shop stacked with china. Apart from the fun of finding out, there was a logical reason for the inclusion of such a scene in the film. English china is nearly half as hard. It is natural therefore that a bull should not feel too friendly towards china shops.

To build a china shop set actually on the farm was easier, and safer, than transporting a one-ton bull to the studio. Stacked with a thousand pieces of reject china, the "shop" at last waited for its

one and only customer. Reporters and photographers, sensing the news value of such an incident, were there in strength. Local sightseers were warned by the village policeman that they stayed at their own risk. Last minute checks were made to lights and trip wires, then our two cameramen, using wide angle and long focus lenses, signalled they were ready.

As the bull, "Madresfield Champion," was slowly led to the set by farm hands, the atmosphere was electric. Would the set, doubly reinforced by stout beams, stand up against the charge of a possibly frightened bull? Would the barricades, now seeming very frail, keep the onlookers and technicians in safety? What would the bull really do as china smashed to fragments all round him?

Rarely has there been such an anti-climax. Once on the set with the farm hands on the opposite side of the barriers, Madresfield Champion stood still and slowly surveyed the chaos. Then, stopping carefully over trip wires with the grace of a ballet dancer, he carefully selected and chewed half a dozen advertising leaflets from the counter. "Ferdinand!" yelled someone from the crowd.

Cameras were stopped while the farm hands came on the set and whalloped the bull with sticks. Down came a few planks. It took nearly twenty minutes of alternate goading and throwing china to break even half the pieces in the shop. Only one thing remained to be done. "Ferdinand's" girl friend, Rosebud, a prize cow was led to the set. For a mo-

(Continued on Page 124)

Color Correction—What It Means

Are you one of those who believe "color-corrected" lenses are something exclusively for color photography? Here this much misunderstood term is explained in detail by a prominent optical engineer.

By ALLEN E. MURRAY

Scientific Bureau, Branch Of East Optical Company

BECAUSE the term "color-corrected lens" is often misunderstood by professional as well as amateur photographers, we believe the following article—perhaps the most lucid ever written on the subject—will clarify the meaning for many of our readers. It was originally published in INTERNATIONAL PHOTOGRAPHY for June, 1951. We are indebted to IP's editor for permission to reprint it here.—EDITOR.

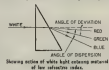
COLOR-CORRECTION in lenses is not a new wrinkle introduced as a consequence of the growing popularity of color film. Lens designers and opticians have been laboring over color-corrections since the first lenses were assembled into optical systems. The term "color-corrected" is not so profound that, like, "abracadabra" or "open sesame," it should become a conjurer's word to call up the perfect lens. "Color-corrected" to the optical designer and optician has a very definite meaning, such as it may have been assigned to include application to almost any type of lens.

A color-corrected lens, in the language of the designer, is one satisfying two rather stringent specifications, and no lens failing to fulfill these two requirements can fairly be called "color-corrected."

Historically, unwanted color in images was recognized very early, and constituted one of the first challenges to the lens designer's skill. The researchers aimed

at discovering the why and wherefores of this annoying color led to a better understanding of lenses in general, and to new glasses, and even today are not completed.

The state of the color-corrections in a lens system is fundamental in the performance of the system and constitutes one of the first considerations in design. The subject is rather complicated, as



Showing action of white light entering material of low refractive index.



White light entering material of high refractive index, at the same angle as above.

FIG. 3.—Comparison of dispersion of red and blue light.

there are in reality two distinct color aberrations the designer must eliminate before he is entitled to say that his system is color-corrected.

But before we undertake to amplify this statement, we must refresh our memories with a few facts of how light behaves.

Light travels in a vacuum at the astounding rate of 186,000 miles per second; that is, all light is conjectured to do so—blue, yellow, red, infra-red, etc.—it all skips merrily along at this

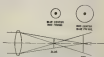


FIG. 2.—Glass refractivity of glass is greater for blue than for red. Blue light will bend at a greater angle than will the red.

steady rate in empty space.

But something happens to this light when it reaches a region filled with a more tangible substance. What happens is exactly the same thing that occurs when a train hits a snow bank, or a football player enters a broken field; a reduction of speed. At the boundary of the optically denser medium, the light beam is bent, or refracted, if the angle at which the beam hits the denser medium is other than 90°.

Specifically, as Fig. 2 shows, on entering a medium in which the speed is less, the beam of light is bent toward the normal, an imaginary line perpendicular to the surface. The reverse is true on leaving.

The crux of the color effects is that in spite of the fact that all colors are transmitted through empty space with the same velocity, they meet upon being treated differently when traveling through ponderable matter. In glass, for instance, red light will travel about 1,000 miles per second faster than blue light. This speed differential has as its consequence the greater bending of the blue light over red light, causing the dispersion shown in Fig. 2.

In the design and manufacture of photographic objectives, several different types of glass are used whose basic action is illustrated in Fig. 2. One type is of low index of refraction, i.e., it retards light little in passage. This glass, is

(Continued on Page 56)

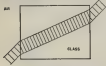


FIG. 1.—Showing how beam of light is bent or refracted as it enters and leaves a denser medium.

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Duke University Makes Own Teaching Films

Over 20,000 feet of 16mm medical movies filmed to date.

By EARL PORTER



DIRECTING Duke University's medical movies production unit is Dr. J. E. Markes who has pioneered in medical visual aids for twenty years. "Sweet of our films," says Dr. Markes, "is the editing. We have not the dramatic details and sound effects."

Students in anatomy get a movie preview of each quarter's work before classes begin. They see on the screen all the details of the human body, how various muscles and tendons work, structures they'll be studying for the rest of their medical lives.

Then they begin regular classes and laboratory work. Meanwhile, the full-length film is divided into little 20-minute short subjects, one of the upper arm, another the lower arm and so on.

During the rest of the course they take advantage of continuous movie showings from 1 p.m. to 5 p.m. daily and drop in several times a week for refresher sessions on what they've been studying. Each time they'll pay special attention to a short subject on today's work or get another preview at what's coming up tomorrow.

Before Duke's movies are finished, Dr. Markes and his staff describe all that's going to be shown and record it on a sound track that will be broadcast with the movie. This means that while 20 or 30 students are looking at movies, Dr. Markes and his staff can be busy with another 20 in the laboratory. Two years later, when the students take their national examinations, they come back for a review and see the complete show again.

Other doctors are enthusiastic movie fans too. Orthopedists, surgeons and nose and throat specialists come in for special shows that illustrate detailed relationships between various parts of the body. The nurses need the movies too, especially those who work in the operating room. Physical and occupational therapists are also frequent visitors.

Here's what the movies do at Duke:

(Continued on Page 377)

THERE AREN'T any searchlights and no fire flowers for the ladies, but Duke University doctors hold a gala movie premier at least once a year. Movies making it under full steam at Duke's School of Medicine, and the price of admission is included in the medical student's tuition. The impresario is Dr. Joseph E. Markes, a director without a beret or sunglasses, and a man not given to sudden bursts of artistic temperament. He's simply a hard-working professor of anatomy who has been pioneering in medical visual aids for 20 years.

Duke's movie makers have produced more than 20,000 feet of 16mm teaching film and more than 600 colored slides to show with it, enough for about 60 full-hour shows. Here's the way it works:



DUKE'S MOVIES make medical education more fun. Future doctors get a preview of tomorrow's work in the laboratory, at some time have recorded lecture that accompanies film.

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RANGERTONE magnetic tape recording equipment in use during production of Eight-Lear's "The Windmill." Here sound is being recorded on a short piece on the studio set. Each letter was edited with picture film, using the four-letter picture below.

Rangertone Sprocketless Magnetic Tape Recorder

Magnetic pulses, recorded as separate control signal on tape, keep recording in sync with picture film.

By R. M. RANGER

Reporter, Inc., Newark, N. J.

WHEN RANGERTONE possessed in the magnetic recording of sound for motion pictures, the field was wide open to select the most favorable magnetic medium. Tests were made with sprocket-hole magnetic film, but the inherent quality and economy of standard quarter-inch magnetic tape indicated such a decided spring-board, that all energy was soon concentrated in this field.

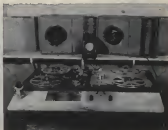
Naturally, quarter-inch tape only a mil and a half thick cannot support actual perforated sprocket holes, but with Rangertone recording system they are there as invisible magnetic pulses registered as a control track down the center of the tape during shooting with the camera. These pulses come from the same sixty cycle power that drives the synchronous motor on the camera. Thus an accurate record of the camera speed is recorded on the tape, along with the sound—as a separate track—ready to be used on playback to hold the tape movement in strict accord with the film motion in the recorder or projector. The magnetic pulses are on the tape at right angles to the normal sound recordings so that they do not interfere with the latter in any way. Furthermore, they do not need to be put on during the registry of the sound, but may be put on later. This makes the system a natural for post synchronous recording, when the sound track is pre-recorded and the track is played back while the cameras are doing the shooting of the actors who are animating the sound. In other words, the control pulses are always put on the sound track when the camera is recording the scene photographically.

Right from the start, the system has proven its worth, as was amply demonstrated for top musical quality on "The Tanglewood Story," which Larry Med-

(Continued on Page 372)

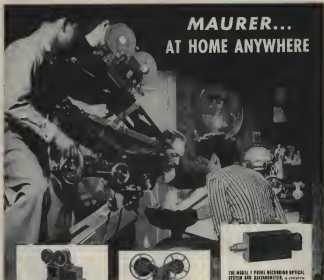


COMPLETE synchronous record and playback Rangertone magnetic tape console. Using ordinary ten-track tape, control signal that keeps tape in sync is recorded simultaneously with sound.



QUERITOR is a double-tape playback unit which handles two tapes synchronously, moving either forward or backward. With this unit editor can make good takes in one single track.

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SHOOTING a scene for "The Big Story" which later was integrated with live action scenes played in the television studio. Directed by Charles E. Skinner, film scenes were photographed by cameraman George Washler.

PROOF coordination between cameramen, film and TV lighting personnel insure successful integration of filmed scenes with live action says Charles E. Skinner, shown here at far left directing a scene for "The Big Story."

"Integration" Pioneer

By CHARLES E. SKINNER

*Reprinted from "The Screen Director" publication
of the Screen Directors Guild, New York City, N. Y.*



Film and live action are integrated
with outstanding success in the production
of "The Big Story" for television.

A LREADY FAMILIAR enough to hold a place in the world of the facile cliché, today's arguments in the great debate on "Film versus Live Action in Television" can be looked upon as an inevitable development in a period of constant transition. Among the arguments one hears is that film can't be integrated with live-action without the TV audience's being painfully aware of where the film leaves off and the live action begins. After more than two years of integrating film with live action on Bernard Proctor's "The Big Story," I submit that this just "ain't necessarily so."

Indeed, so many people, even experienced film men in Hollywood, have paid so much attention to the question

of which parts of our show were on film and which parts were live action that I sometimes have wondered whether anyone cared whether the program was any good dramatically. (The continuing popularity of "The Big Story" on Friday nights would seem to prove that this was a needless worry.) Our success in cutting from live to film and back again in the middle of dramatic action and dialogue leads many people to believe that the entire show is on film.

Since there are factors in our successful film-live matching that we do not care to discuss, I shall not dwell on our methods in detail, but I would like to describe some of the paths we took in meeting the problem of integration.

I would like to say right off that there

is no great mystery about our success with integration; the balance in cutting from live to film and back again is dependent on a technique which does not require, as do so many television shows, the all-important art of motion picture editing.

Anyone who plans to integrate film with live action is faced accordingly with the bugaboo of poor film reproduction on television. But this problem can be solved if the proper coordination is developed between film cameramen, laboratory and TV lighting personnel. In addition to the usual film reproduction bugaboo, we had another problem: Our type of story had to integrate and match cuts, even to closeups, from film to live and from live to film. This was absolutely necessary if we were to be successful in meeting the challenge put to us by Sullivan, Stauffer, Colwell & Baylis, agency handling the account of Pall Mall Cigarettes. After three successful years with "The Big Story" on radio, Pall Mall, they said, was interested in putting the "Story" on TV—pro-

vided we could grove, with a pilot film, that the show could be visually as dramatic and believable as the radio story had been. All important in the test was whether we could produce visually the feeling of being "on the spot" with the reporters in the various cities represented—a quality which had contributed so much to the success of this well documented radio series.

This challenge was made to us shortly after Desmond J. Proctor, who at that time was exclusively a radio producer, had employed me to direct a film for another TV show he had in mind. Mr. Proctor placed "The Big Story" in my hands dramatically as well as production-wise, and we faced immediately a major problem: the problem of "conversion." Before going further into the discussion of integration I would like to examine briefly this question of conversion.

New mach has been used pro and con about the conversion of entertainment stories from one medium to another. There was much criticism over the conversion of radio stories into film stories, and today there are some who say that the adaptation of radio stories to television will cause TV standards to drop to the low standards of some radio programming. This is a point that is being carefully studied by sponsors and agencies with successful radio properties under consideration for TV adaptation.

It is true that conversion of many radio programs to TV would be a mistake. But if care is taken in the type of material selected for conversion, and if experienced visual writers, adapters and directors are given the duties of making the conversion, there is no reason why many extremely valuable radio properties could not become successful television shows.

This is not to say that people can't be "converted" along with the material. Client agencies and personnel who handle the many facets of televising can make the transition as well. There is, I submit, a common ground on which the experienced visual man can translate his production terms and procedure so that those needed to "convert" with a program can quickly grasp the radical demands of a visualized program in sharp contrast to radio. There are those who scoff at this procedure—who say that each field will be better off if its own trained people stick to what they know and don't express their opinions in the other field. But we would do well to recall a similar attitude once existed between movies and the theatre, each thinking the other incapable of working in its field, with a resultant loss for each. I can say for myself that if I can consider as a yardstick one two years at televising with a "converted" program, with its

(Continued on Page 379)

New All-purpose Film Leader Benefits TV Film Producers

By LEIGH ALLEN

A NEW TYPE film leader for motion picture prints is being made available to all producers and film laboratories by the Society of Motion Picture and Television Engineers. Use of the leader will eliminate "blind" switching of telecast films and will permit synchronous threading of all 16mm projections. It will not upset established theater practice because the new design, which makes several special provisions for television use, is based upon the familiar Academy leader.

Excellent results have been reported following a six-month period of testing under supervision of SMPTE in which well over 10,000 prints have been made and used. The new leader has been endorsed by several television broadcasters and by the New York Projectionists' Local. Widespread use on prints for theater as well as for television projection is now urged by the Engineers.

C. L. Townsend, writing in the *Journal of the SMPTE* for May, 1951, stated "The New York Office of several television companies have been using the new leader on their television recording releases and on certain other television films."

The familiar American Standard Z23.55-1947 is the foundation for the new leader design. Only additions have been made, and only such additions as cause no deletion of past features.

The main body of the leader ahead of the three-foot mark is changed from a solid black to an appropriate simple pattern (see illustration). The design is intended to be used in television to permit checking system operation before switching into the first picture frame.

The footage materials have been changed to project right side up. It has been found that precise television program switching has caused these materials to become of great value to program directors. Right side up projection makes them easier to read. The "Six" and "Nine" markers are spelled out to insure against confusing the two.

The picture threading frame for each 35mm foot is identical with the old leader, consisting of a full white background with black numerals overlaid. The 35mm sound threading marks have

been changed to read in plain English "35mm Sound," replacing the previously used thousand mark. Added are 16mm sound threading marks which define the sound scanning position for that service. The leader also offers protection against mis-threading 16mm projections.

Additional changes include a change of the familiar black frames following the three-foot marker. These have been given a dark grey tinge. This is advantageous for television in that it will permit TV operations to switch into the dark frames without as much flare and black spots as now occur. Also, a small switching cue (see illustration, third frame above lower left-hand corner)

(Continued on Page 377)



SAMPLE FOOTAGE from new SMPTE film leader for 16mm and 35mm motion picture prints. Broken edges indicate duplicate frames have been deleted.

Is Organization The Answer?

In this sequel to his July article, Alvin Roe discusses reader reaction to his "collective" film making idea and cites a new and interesting plan adopted by movie makers in England.

By ALVIN D. ROE

WE PURPOSELY omitted last month the "sequel" to our article in the July issue which dealt with "The Amateur Today," in order that we might have opportunity to receive and evaluate reader reaction. Some of it has been very interesting, and we presently shall quote from letters received from several amateur movie makers whose work generally is well known among the nation's cine cameramen.

In the July article, we stated that evidence showed a steady slowing down of interest on the part of American amateur movie makers, and suggested that what was needed was for amateurs to work collectively instead of singly, which would lead to better picture making, more consistent working in the hobby, and therefore more sustained interest—with the individual cine amateur deriving greater enjoyment from making movies.

Said George Kinstin, of Parkchester,

New York: "Your article in the July issue has touched a soft spot in my makeup, and I feel impelled to add a few words.

"To begin with, the story and article are so true! I personally have been through both phases—the outstanding club which collectively made films, and the present void of inactivity. The club in question has since passed into oblivion. Today, with television and other interests taking a large share of the cine amateur's time, many old clubs of organized amateur movie makers have—in your article stated—slipped by the wayside. The advanced amateur who still desires to make serious pictures and work with others is faced with having to organize a new club and endure that phase of endless bickering over the constitution, officers, the showing of mediocre films (frequently snapshots badly exposed and focused, etc.) which has been the common pattern of forming of

many cine clubs in the United States.

"If American Cinematographer can stir up some interest that will bring about the development of more progressive clubs on the order of the Long Beach (Calif.) Cineclub, and others like it here in the U. S., it will be of immense benefit to the hobby."

Ralph E. Gray, a stalwart among the rugged individualists who has been a lone worker—and a darn good one, too!—since he first began shooting movies years ago, says: "If the grouping of talent, as suggested, will get more people interested, well and good." He further reports that for some time groups of advanced cine amateurs have been working together in producing serious films in several cities that he has visited on his lecture tours. He mentions a Cancer film produced by a group in New Jersey; the film "Paths To Safety," produced by the Movie Makers Club of Oklahoma City, as well as collective filming projects being undertaken by amateur groups in Miami, Florida, and St. Louis, Missouri.

Gordon Maltheus, editor of the highly regarded *Amateur Cine World*, published in London, wrote: "I was very interested in Alvin D. Roe's article in your July issue. I endorse much of what he says, but there are other important aspects so far as the European amateur film movement and its relations with the American are concerned. . . . There seems to be a greater appreciation in Britain than in America of the value of securing general circulation for amateur films so that they reach the public as well as the closed circle of amateurs. We also have the encouragement of our Government-sponsored British Film Institute, and in other European countries official patronage is evident." Mr. Maltheus has kindly offered to write an article on this subject for a future issue of AC.

In the meantime, we note in the July and August issues of Mr. Maltheus's (Continued on Page 273)



NIGHT BYOND amateur groups are organized as "production units," much the same as professional film companies. Thus, besides the cameramen, there are script writers, directors, prop men, grip, etc. This makes for expedition and more finished productions, with all sharing the screen credit.



TWO SPOTS and a 50 light illuminate scene above from "Let's Go Places," produced by International Motion Picture Club, New York. Actually, only center light (right) illuminates set, lighting girl's back and hair and reflecting light from mirror to her face.



Lighting Home Movie Interiors

Success of indoor photography depends upon the
filmer's knowledge of basic lighting principles.

By LEO J. HEFFERNAN

Previously By The Author

INTERIOR LIGHTING is "all in the mind" of the movie maker; it has to be that way or no good will come of indoor filming.

Lighting know-how is mainly an accumulation of do's and don'ts called from one's own experience or from the experience of other cameramen. In a way, each lighting setup is an experiment. Invariably the lights must be moved around until a desired effect is obtained. These adjustments bring about a refinement in lighting technique by creating pleasing balance between high-lights and shadows; nevertheless a filmer's training should enable him to approach an interior scene with a clear idea of the general position which each of the main lights is to occupy.

The reason why location of the main lights must be determined in advance is that a definite mood is desirable in the screen picture—that is where artistry

comes in. The picture has already been planned, and so the lights are set up only after the cameraman has formed an idea of what he wants to produce in the way of lighting effects. It is not simply a matter of directing enough light on the scene to illuminate the players and the set; he can do better than that. In common with Reinhardt and other acknowledged masters of light and shade, he will be guided by instinct and the utilization of good taste. There will be much arranging, re-arranging, scrutinizing, and changing, before each light is placed where it will do the most good.

Have you noticed that, in professional photoplays, extravagant lighting frequently occurs in sequences where the story action takes place in a home? Shots of cozy living rooms, bedrooms and dens are given special treatment by the lighting technicians because of the presence there of home lamps, candleabra, fire-

places, and other sources of natural lighting. When these are included in a scene as apparent sources of room lighting, they may be used as a basis for strongly directional lighting and eye-catching effects which would appear bizarre, otherwise. It is a happy circumstance, therefore, that most of the interior shots likely to be filmed by an amateur movie-maker are scenes inside a home. What could be surlier? All he has to do is include a table lamp or a floor lamp in the scene, replace the household bulb with a No. 1 photoflood bulb and, *Presto!* he has furnished himself with a springboard for many lighting ideas. The motivating question will then be, "How must I light the scene so as to make it look as if the main light were coming from this lamp?"

The best approach to interior lighting lies in the study of lighting effects found

(Continued on Page 366)

COLOR-CORRECTION—WHAT IT MEANS

(Continued from Page 214)

general, will send blue only slightly more than the red.

At the other extreme are the glasses of high index, in which the velocity of light is lower, and this in turn means a greater angle of deviation whereby the blue is affected much more than the red, so that the angular dispersion is greater.

Sir Isaac Newton, who founded much of optics as we now know it, from his



FIG. 4—How two lenses are combined to bring light of any two colors to a common focus.

extensive experience with the glass prism of his day, concluded erroneously, that dispersion is always proportional to the deviation and that, as a consequence, achromatic combinations are impossible. Sir Isaac committed one of his rare mistakes in concluding that achromats are impossible and that the reflecting telescope is the best answer to the color problem.

Not long after Newton's death, the first achromats were made in England by combining a positive crown and negative flint lens to produce the basic type of achromatic doublet.

We have seen in Fig. 2 that a ray of light, upon passage through a prism, is bent, or deviated, in the direction of the base. This is essentially the fundamental reason for the action of lenses of all kinds. The curved surfaces act like an assembly of an infinite number of small prisms, deviating each ray striking the surfaces sufficiently to bring it to a se-



FIG. 5—Chromatic aberration can be looked on as arising on the lens just as when the refractive powers of the lenses or lens system are concentrated.

vision, real or virtual, with the other rays forming the image.

A positive lens will converge parallel rays to a real focus, while a negative lens will diverge parallel rays, making them act as if they came from a point, the virtual focus.

From what was said previously concerning dispersion, it is apparent that

any simple lens cannot have one definite, fixed focal point for all light. Since the light-bending power, or refractivity, of glass is greater for blue than for the red, the blue light will focus at a point nearer the lens than the red, this situation is illustrated in Fig. 5. This is the simplest and most readily grasped type of chromatic aberration, and usually the first corrected.

In practice, this longitudinal chromatic aberration will mean that there is no one focal point on the axis but several, depending on the color of the light used. A photograph made with a simple positive lens would show a large shift from visual focus to photographic, even with panchromatic negative material. The "chromical focus" of the old-fashioned photograph was of this nature.

A perfect lens cannot be made, and even in the best lenses, there remains a very small residual of this aberration, so that when a color-blind emulsion responding only to the blue is used, a shift towards the lens is usually necessary—the so-called "chromical focus." This effect is familiar also to those who have used infra-red sensitive emulsions in their



FIG. 6—Where red and blue colors focus in one focal point on the axis, and nodal points in the two colors are different, automatically the lens must have different focal lengths for the two colors.

cameras; for best results, it is usually necessary to rack the lens out a trifle.

A further result of this resolution of focal points in the situation shown in Fig. 3, where at the blue focus the red rays create a red disc, and at the red focus the blue rays create a blue halo. A point object could hardly be photographed as a point under these conditions.

This axial chromatic is not difficult to correct and, as noted before, is given high priority. The secret lies in the relation of dispersion to deviation. Consider for a moment a simple positive lens as shown in Fig. 3. The marginal rays have been deviated toward a focus, and at the same time because of the dispersion of the glass, the red and blue rays are aimed at different points on the axis.

Now, everything would be perfect if there existed an optical material with a given amount of dispersion and no re-

fractive power, for then correction could be effected with a plane parallel sheet of this wonderful material. Actually, the only practical material for this task is a glass which has a fortuitous relationship of refractivity to dispersion such that the dispersion will effectively cancel that of the positive lens while the refractivity is insufficient to cancel completely the convergence of the positive lens.

The lens component effecting this achromatism is negative, as shown in Fig. 4, and must have higher refractivity and dispersion than its positive mate.

This combination, then, will bring light of any two colors to a common focus

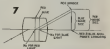


FIG. 7—Example of chromatic differences of magnification, or lateral axis.

on the axis. The other colors will focus at points practically identical with the chosen colors. Thus this lens would give a color-free star image on the axis.

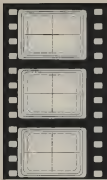
The other type of chromatic aberration is a bit more difficult to understand. It is somewhat more complicated both to explain and to show in a drawing. Some of us may recall mention in our reading concerning optics of certain things called "cardinal points," "ideal planes," etc. These points and planes are convenient ways of describing the properties of lens systems and are indispensable to the lens designer.

Briefly, these cardinal points can be looked on as points on the lens axis at which the refractive powers of the lenses or lens system are concentrated. The cardinal points and planes are exceedingly useful because they simplify computations by replacing a complex, almost unmanageable system by points at which all the refraction can be considered to occur, or more graphically, by thin lenses whose laws are simple and easy to handle.

Irrespective of the distance from the rear surface of the lens to the focal point in parallel light (B.F.), the equivalent focal length (E.F.) of a lens is defined as the distance from the second nodal point (cardinal point) to the second principal focal point (Fig. 3).

We are familiar with the fact that even with infinitely distant objects the image size is proportional to the focal length of the lens used. The 50-mm lens on camera lenses will yield an image one-third the size of that formed by a 6-inch lens.

Now, it is a most unfortunate fact that the cardinal points have positions de-



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pendent on the refractive index of the
glass composing the lens. Expressed in
other words, each color has its own cardinal
points which can be distinct from
those of any other color. Now, if the lens
is color-corrected axially, i.e., if the red
and blue colors unite in one focal point
on the axis, and if the nodal points in the
two colors are different, automatically
the lens must have different focal lengths
in the two colors. This is shown in Fig. 6.

However, these differing focal lengths,
as we saw previously, mean differently
sized images: that is to say, the magni-
fication will be different, depending on
the color (Fig. 7). It is for this reason
that this second type of chromatic is
spoken of as chromatic differences of
magnification, or lateral color.

In a lens afflicted with this aberration
the points in the margin of field are
drawn into spectra, or rainbows. This
particular aberration is most annoying
even with black-and-white film, for it
quickly sees the limits of usable field by
producing a graded soft focus near the
margins.

In the correction of this aberration, ad-
vantage is taken of the fact that some
lens systems will give a spectrum with the
red end closer to the axis; while others
will give a rainbow oriented the other
way around. In the correction of lateral
color, then, systems of these opposing
characteristics are balanced against each
other until a satisfactory compromise is
found.

We have now seen the two types of
pure chromatic aberration—longitudinal
chromatic aberration and chromatic dif-
ference of magnification. The former, the
simpler type, is manifested by the ab-

sence of one single focal point for all
colors with the existence of a distinct
point for each separate color. This is a
very troublesome aberration and is cor-
rected in all but the most inexpensive
lenses. These lenses can be spoken of as
being "color-corrected" only to the extent
that there is little or no shift of focal
point with color.

This aberration is in theory independ-
ent of the aperture of the lens, though in
practice its effects will be magnified by
stopping down, for then the effective
depth of focus is increased and the image
is less sensitive to improper focus. Longi-
tudinal chromatic aberration is corrected
by combining a positive lens with a nega-
tive lens of higher refractive index and
dispersion and of such power that the
dispersion of the positive lens is an-
nulled, but its convergence not canceled,
so that a union of the red and blue colors
occurs on the axis.

The second chromatic aberration is
more complex and manifests itself in
differently sized images in different col-
ors. This chromatic difference of magni-
fication is troublesome even in black-and-
white photography, and the best lenses
are corrected for this aberration.

Only the photographic objectives de-
signed with this aberration pared to
tolerable limits can be spoken of as "full
color-corrected." This aberration is pro-
portional to the image height, thus be-
coming worse toward the corners of the
picture. Stopping down the lens is with-
out effect on this aberration. It can be
corrected by employing combinations of
elements of opposing tendencies, so that
one set cancels the effects of the pre-
ceding.



"Bodie never believed in using a telephoto for overage before."

The corrected lenses of the reputable makers have all been designed with this aberration in mind and can justly be spoken of as being fully color-corrected. However, it is well to remember that nothing perfect is manufactured, and that with the most refined tests it might be possible to demonstrate some lateral color with the most nearly perfect lens made. This would be without significance, however, since the test necessarily would be artificial and would not correspond to the conditions of use of the lens. If the longitudinal chromatic aberration has been corrected, and if the lateral aberration cannot be detected on the film, for all practical purposes the lens is "fully corrected."

Full color-correction is as essential in the best photography and projection with black-and-white emulsions as it is with color film. The effect of lateral color in the case of the former is to create a soft focus effect toward the margins while with color film registration difficulties are the consequence of this aberration.

Color photography and projection has introduced no new element into the design of good objectives. With color film the color aberrations, particularly lateral color, become visible as color defects. The best lenses have always been fully color-corrected.

LIGHTING HOME MOVIE INTERIORS

(Continued from Page 345)

right in the home when ordinary room lights are turned on. It is the aim of the cameraman to reproduce these effects to some extent in his photography, using photo lamps that are twenty times brighter than home lights. This sounds like a problem in mathematics but, in practice, due to the strongly concentrated light needed for color film and the narrow brightness range which the film will handle, it will be found that a flower must compromise in many ways.

Shaded areas should receive at least 25% as much light as do the highlighted portions of the scene. (The contrasts in ordinary room lighting are sharper.) The situation is further complicated by the fact that the main light sources are not the room lights, but powerful movie lights which must be located outside picture area. Each movie light casts a shadow and these shadows may belie the intended impression of, for example, the shadow of a home lamp, (shown in the scene as the main source of light), as projected upon a background wall.

To be good, the lighting must be convincing, and so tell-tale errors such as unwarmed or multiple shadows should be eliminated. This can sometimes be done by raising the lights, but it is a

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had practice to try to correct the evil by pouring more light on the background walls. Instead, the best procedure lies in moving the furnishings of the set, the players, and the room lamps, away from the wall. Thus, the unwanted shadows will fall upon the floor where they will not be noticed.

The idea persists that flat lighting is best for color filming because the colors themselves furnish sufficient contrasts to provide pleasing pictures. Assuming this to be so, how can sequences be photographed in flat light in a house and look right to us on the screen, when we know that usual room lighting is extremely contrasty? Moreover, color plays a secondary part in vision because most of us are capable of admitting nuances of light and shade falling upon objects—without noting their color. It is unreasonable to expect an audience to adjust itself to a deluge of color-wise highlights and shadows in scenes as familiar as those made in a home. Flat or shadowless lighting, (coming from the general direction of the camera), may be suited to occasional scenes, but it is patent that strong patterns of light and shade should predominate throughout every sequence filmed indoors.

And yet, hard and fast rules cannot be set down since many and varied moods can be created in the screen picture by means of lighting alone. High-key lighting is suited to gay, frivolous or otherwise anidramatic sequences. General front lighting and a bright background together with full exposure to the film, and the presence in the scene of light-colored clothing, drapes, furniture and rugs—all will assist in establishing a happy mood. Flatness is avoided by the use of side-lighting and back-lighting in such stages.

Dramatic scenes depicting dignity, sorrow or conflict are usually photographed in medium or low-key lighting. This is produced by directing the light upon the actors and key objects in the scene, and leaving the backgrounds and non-essential parts of the picture area rather dark. Thus, the illuminated parts of the scene are set off by velvety shadows and the audience must concentrate its attention in a dramatic sequence for example, upon the faces of the actors since there is nothing else on the screen at which to look. The mood is one of brooding and suspense.

These are some of the thoughts which will be in the mind of a moviemaker as he approaches the task of setting up lights for filming indoors. His work will be limited in scope by inferable conditions which will surround him and keep him on an every side. For instance, he may not be able to move the camera as far back as he likes for a long shot—rooms dimensions. And even if he can

move back, he probably cannot pour as much light on the scene as he wants to—"jacking" problems. If given to wishful thinking, he might conceivably sit down in the middle of a clutter of movie lights, extension cords, disarranged furniture, to think of all the beautiful shots he would like to make, but cannot. That will get him nowhere, expeditiously.

Such a thing could not happen to John G. Mowbraker who would have been thinking about the shooting scenes for weeks, turning his mind to solving all of the problems beforehand. Many angles and corners about the house can be used as sets, and he can think of ways in which to light them up so as to follow the requirements of the script. The action of the players, entrances and exits, the backdrop in camera positioning for long shots, medium shots, and closeups, inter-change of lenses, the use of lap-dissolves—everything—right down to the last detail, is clear in his mind. When does he plan all that? Oh, riding back and forth to work; during moments which he steals from his daily tasks, or, perhaps, in bed just before he falls asleep at night. The point is that he is right in these pitching and the job will get done principally because he wills it so. His is the approach par excellence to any kind of moviemaking.

An acceptable set of lights for home filming consists of three or four reflectors using No. 2 photoflood bulbs, four spotlights having two-watt projection bulbs or better and, in addition, some smaller spotlights which will come in handy for illuminating small areas. All lights should be on stands and many lengths of heavy electric extension cords will be needed.

It would not be possible to use all of these lights at one time without blowing fuses—but, it might be desirable to set up, say, three floodlights for a scene, then, in the next scene, a long shot, use four

spotlights or so to project light into the area.

Inexpensive substitutes for reflectors and spotlights are the reflector food and reflector spot photoflood lamps used in clamp-on units. These are handy because, by means of the clamp, they can often be positioned in otherwise inaccessible places. But for general use, a reflector should not depend upon a chair back or other casual mounting surface. Instead there should be substantial lamp stands affording ample elevation upon which to clamp the lights. Without the flexibility provided by the stands, the clamp-on units are bothersome in the extreme.

The average indoor scene will have a depth of about ten feet. This means that the distance from the actors or foreground objects, which get the benefit of the main front lights to the background walls will be ten feet more or less. Light strength falls off sharply, so much so that, if the distance from the main lights to the actors is ten feet, and the wall and background objects are another ten feet further back, the background objects and wall will receive only 25% as much light as the foreground. (Light strength decreases to one-quarter when the distance it must travel is doubled.)

For this reason, it is necessary to illuminate the background independently of the foreground. This is done by placing a spotlight or a floodlight as near to the background as possible and directing its rays on the underlit area. It may be necessary to use more than one lighting unit in this way if they cannot be positioned close and still be out of the picture area.

The location of the main light will depend upon the effect which the cameraman desires to create in a particular scene. This effect will establish the mood or "key" and thus the main light has come to be known as the key light.

Anso Color Film For MGM Cameras

TO ENABLE Norma Shearer Mayer get off in a flying start with the filming of "The North Country," Anso shipped first lot of Anso Color film for the production by the famed Flying Tiger air freight line. Production is fast employing newly developed color filming method utilizing Anso Color negative and positive. Robert Surtees, A.C.C., directed the photography.



If the establishing shot (long shot) has shown that there is a table lamp at the right, then the key light should fall quite noticeably from that direction. There is no reason why it must be the exact direction. Airline lenses will permit the movie light to be raised or lowered or otherwise adjusted without destroying the illusion that the light is coming from the house table lamp.

Inasmuch as the key light will project shadows, a "fill light" is employed near the camera, (usually on the side away from the key light), and this illuminates the shadows on foreground objects. In color filming, the shadow portions should receive at least 25% as much light as the highlighted areas, or the shadows will have a black opaque look.

Backlighting will pick up contours and will provide a pleasing, well modeled effect which will separate the foreground from background objects. Spotlights should be placed above and slightly to the rear of the foreground actors. While the lights are trained on the actors, they should not shine into the camera lens. Movie amateurs have trouble keeping light stands out of camera range when they are trying to create back-light effects, so they usually compromise by placing the lights high up and to the extreme side of the actors, rather than in back of them.

As the lights are being adjusted, the scene should be scrutinized carefully in order that all lighting errors be corrected or eliminated. There are numerous and some are hard to detect. They will be described, and suggestions regarding their cure will be given in a subsequent article.

RANGERTONE RECORDER

(Continued from Page 25f)

son of MPO produced for the State Department employing the Boston Symphony Orchestra and Sergei Koussevitzky. Young & Rubicam advertising agency was responsible for another milestone. Portability and compactness were at a premium in making "The Pharmacist's Mate," shot aboard the submarine Sawfish for a Pulitzer Prize series TV show. The Rangertone magnetic recorder was chosen for the job. The March of Time has recently been making a documentary deep in coal mines using the Rangertone. Here storage batteries provide the power for both camera and sound equipment.

Quarter-inch magnetic tape is more than just another way of getting sound for motion pictures; it lends to other advantages. The normal playback characteristic of the tape gives emphasis to



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highs which is just where film sound is deficient. So, by judicious coordination of these complementary characteristics, a very smooth final sound print is obtained with a minimum of phase distortion. One of the best equipped government film laboratories found the cross modulation resulting from the magnetic tape method to be down as much as 37 db. Such quality requires, of course, close coordination in the processing of the film as well; but most of the major laboratories have undertaken to give their customers the benefit of this quality.

Now Cue Editing has been added to Rangemane techniques. As the name suggests, this is a method of using tape cue tracks to edit the original tape recordings and wind up with a continuous tape recording matched to the final edited picture. This original may then be used for the final transfer and mix to get the negative for making the composite prints. This means that transfers have been reduced to a single recording from original tape to final film negatives. The steps are as follows:

1. The original tape recording is sequence-cut to the good takes.
2. These good tape takes are then transferred to a direct positive film work print.
3. This work print is fine edited to the picture.
4. This edited sound work print is then transferred back to a cue tape, quarter-inch magnetic.
5. This cue tape is then used as the guide in the Rangemane Cue Editor for matching the original tape to the cue.
6. The final edited original tape track is then used in synchronous playback for the final mix to negative film.

In step six, a single transfer from the original tape is made to the final negative sound track.

The Cue Editor illustrated here, is a double-tape playback unit which handles two tapes synchronously, whether they are moving forward or back. As the cue tape and originals should wind up of the same length, it becomes an easy matter to make this final cutting which corresponds in many ways to the cutting of the negative sound track to an edited work print.

The ability to play back this original edited tape with the picture gives producers and clients an excellent opportunity to determine the complete effectiveness of the presentation before the final mix is made.

As the work print will never be used for its sound quality in this method, no special care need be taken to avoid scratches; and no deblopping is necessary. Furthermore, if a mistake is made in the editing or a new plan is made, it is not generally necessary to call for another piece of work print. All that

need be done is to substitute blank film for the missing frames to ensure that the timing will be correct on the final cue tape. Then the cue editor will have no difficulty in making the final flawless original tape takes into a well rounded smooth continuous track of the entire reel. Furthermore, minor adjustments, forward and back may be made on the cue tape if synchronous cuts with the picture show that this is necessary.

The Glen Glenn Sound Company of Hollywood, which has now concentrated all its original sound recording in the quarter-inch tape system, has just completed a remarkably planned sound track which enables a crew to go out anywhere and be in action in a matter of minutes on location, with both camera and magnetic sound.

"We never did live sound before we got our Rangemane Lip-Sync equipment," was the way one busy film producer summarized the facility that this new quarter-inch tape method has made possible. Instead of just post-narration, others have come to realize the dynamic qualities of natural sound with picture.

For the past year, Horace Heidt has originated the sound for his travelling Youth Opportunity Radio and TV Program on a tandem of Rangemanes. It has been on this series that many of the fine points in winding up with top quality sound on film have been evolved.

The Gene Autrey, Flying A pictures are another highlight in this new Rangemane technique. Some other users are: Boy Scouts of America, Julian Bryan, International Motion Picture Service, Knickerbocker, Verano Lewis, Education Division—Puerto Rico, Saul Heller Films, Telenews and Unity Films. In the New York area, Synchronane is renting Rangemane equipment. A complete equipment is being rushed to go to the Israel Motion Picture Studio in Tel Aviv.

Studios and laboratories where producers may send their tapes for transfer to sound film includes the following:

George W. Colburn Laboratory, Inc., 154 N. Wacker Drive, Chicago 6, Ill.; Crowley Films, Ltd., 19 Fairmont Avenue, Ottawa, Canada; General Pictures Productions, 622 6th Ave., Des Moines, Iowa; Glen Glenn Sound Company, 6624 Rossmore Street, Hollywood 38, Calif.; Holly Smith Pictures, 106 South Church St., Charlotte, North Carolina; Precision Film Labs., 21 West 45th Street, New York 19, N. Y.; Reeves Sound Studios, 304 East 44th St., New York 17, N. Y.; Universal Records, 6337 Hollywood Blvd., Hollywood

These laboratories are also in a position to advise in the use of the Rangemane System, as is of course Rangemane, Inc., 73 Winthrop Street, Newark 4, N. J.

Makes Perfect Lap-dissolves



Yolo Automatic Dissolve attachment installed on Cine Special camera.

All you have to do is press up on a lever and hold it until the camera stops. Then wind back film 48 frames, hold the lever down, and start the camera again. The shutter will gradually open as a fade-in occupying the identical frames of film as were exposed in the fade-out. You can make a dissolve from a shot at one camera speed to a scene made at a different speed. And it is equally easy to dissolve from stop motion to slow motion.

Installation of the attachment does not preclude making fades and dissolves manually as before. The shutter lever may be operated independently.

Attachment is easy to install. There are no holes to drill in camera, and the only modifications necessary are removal of notches on camera's variable shutter adjustment lever, and a slight adjustment of backward crank to permit it to clear the attachment housing. With attachment in place on camera, camera will fit the regular Cine Special carrying case, as before.

Designer and manufacturer is Joe Yolo, professional cinematographer, whose Hollywood address is 5938 Santa Monica Blvd.

AN INTERESTING gadget for the Cine Special camera is the Yolo Automatic Dissolve Attachment, which makes it possible for any cameraman to execute perfect lap-dissolves in the camera. Each fade is of equal length and exactly timed.

Lap-dissolves are made by first executing a fade-out, winding back the film in the camera, then making a fade-in over the same footage. The trick has always been to make both fades identical in length and properly superimposed in order to give the dissolve professional appearance. Except where the camera operator has had much practice, this has been difficult. Now the Automatic Dissolve takes out all the guess work.

IS ORGANIZATION THE ANSWER?

(Continued from Page 34)

publication, an excellent idea which might be adopted here in America. It has to do with A.C.W.'s recently inaugurated plan for aiding in the organizing of Cine Circles. Quoting from A.C.W. for July, the Editor wrote:

"So many lone workers write to us to ask if we can devise some way for them to get to know each other. For various reasons they do not want to submit to the discipline of a cine society. They prefer to make their own films instead of assisting in club productions, but at the same time they would welcome the opportunities for friendly discussions and exchange of views that a society provides.

"We hope that the A.C.W. Cine Circles will help to satisfy that need. This is how the circles will operate:"

The writer then went on to explain that in the beginning a notebook will be circulated among members of a Circle. Each member will write something about himself and the film he is making or has made, or he may throw in a problem for discussion, and perhaps add a snapshot of himself. This book is then circulated among the Circle's entire membership; the members thus come to know each other by correspondence, with the possibility of eventually forming discussion groups. The object of the preliminary circulation of the notebook is to enable the members to know each other, learn which is a beginner and which is the advanced worker, thus leading to the ultimate formation of Circles composed of members all on the same level of experience or ability.

In its August issue A.C.W. reports that at the time of going to press, sufficient applications had been received from amateurs to form 12 Circles of twelve members each. Since then, we learn, more than 40 "beginners" have started the formation of Circles in the British Isles alone.

The foregoing, of course, derives from the core of our suggestion set forth in the July issue—that what was needed was more amateurs working together collectively in making movies. However, A.C.W.'s new and revolutionary step may be the very thing, if carried forward in this country, that will reactivate amateur movie makers here and bring active groups together for the purpose of making worthwhile pictures.

And as we rest our case for the present, that we may have time to receive additional reaction from our readers.

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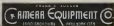
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Television Film Production

By LEIGH ALLEN

Producers of the "Amos 'n Andy" TV show have solved the problem of securing and recording spontaneous audience reaction—laughter, applause, etc.—which is heard with the sound and dialogue.

Instead of running a closed loop of pre-recorded laughs and applause along with the sound track, when the films are printed, the producers screen each picture in the series before a regular theatre audience. As picture unfolds on screen, genuine audience reaction is recorded on magnetic tape. This sound is then integrated in the final dubbing of sound track for the release prints.

Glen Glenn sound studio, using Rantegone Recording Equipment, handles the recording chase for Hal Roach Studios, producer of the show.

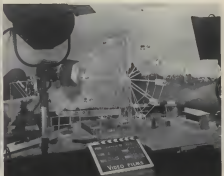
Making a TV musical pay its way is one of biggest problems of TV stations throughout country which feature newsreels as regular program material. Production costs are biggest headache. However, the problem appears to be solved in the recently announced working agreement between United Fruit and 20th Century Fox's Movietone Newsreel,

whereby the two will produce newsreel items especially for television. Instead of producing complete newsreels, as does Movietone News at present for theatres, material will be shot and assembled in clips of individual items and distributed to stations subscribing for the service. Thus, subscriber stations will receive newsreel material regularly, and edit same to fit their TV newsreels. Plus enables stations also to intercept the syndicated material with footage shot of local events by own newsreel camera staffs.

Karl Freund, A.S.C. has been signed to photograph the new series of TV film shows starring Lucille Ball and Desi Arnaz, which will go into production this month.

James Van Tassie, A.S.C., last month, was signed to a terms contract as director of photography for Filmcraft Productions, Hollywood, producers of the "Groucho Marx Show" and "Who Do You Want To Be" show on film for television.

Jerry Fairbanks' video film making activities are spilling over and across the



NOVEL MINIATURE set-up for TV newsreel film produced by Video Film, Detroit, for Genie Sheng Company. Instead of steel gradients, the wheel revolves with twelve tiny scenes of changing mood. A revolving mist tent was used to make each picture appear demanding into moving scenes to illustrate Sheng's claim that "more than a girl of whole world goes into every inch."

street on Sunset Boulevard, Hollywood, to the Rockett Studios, where Fairbanks has leased space to accommodate his rapidly expanding TV film production program.

August Video Film Production: The following cameramen were actively engaged in Hollywood in photographing films for television during the past month:

LEONIE ANDRUIT, A.S.C., "Acme 'n Andy" show, Hal Roach Studio.

WILLIAM BICKNER, A.S.C., William Brody Productions.

STEWART THOMPSON, A.S.C., Arizona Motion Picture Corp.

ALAN STEINWOLD, Cathedral Films.

LISTER WHITE, A.S.C., Jerry Fairbanks-Official Films.

JAMES VAN TREES, A.S.C., Filcraft Productions.

JACK JOHNSTON, New World Productions.

PETER O'CRUTY, Peter O'Cruty Productions.

RAY FOSTER, Paul Parry Productions.

JACK MACKENZIE, A.S.C., Revue Productions.

WALTER STREME, A.S.C., Roland Reed Productions.

PHILIP TANMURA, A.S.C., Roland Reed Productions.

PHILIP TANMURA, A.S.C., Showcase Productions.

JOSEPH BIRDO, A.S.C., Snodet Productions.

CLARK BANSLEY, Supersun, Inc.

WILLIAM WHITLEY, Supertex, Inc.

OLIVER AVIL, Television Associates.

ELMER DYER, Adrian Weiss Productions.

BENJAMIN KLINE, A.S.C., Frank Winke Productions.

KENNETH PRACH, A.S.C., Zen Productions.

Producers of films for TV have been jolted with rumor that nearing perfection is sight-and-sound on tape, meaning, of course, both the picture and sound recording magnetically on tape. Idea could wreck a lot of video film production organizations; but its not likely. Because of the need for editing, pictures would have to be shot photographically on film first, later transferred to tape for release on the air.

Meeting the Hal Roach Studios in Culver City is important as a TV film production center, is the recently refurbished Eagle-Lion studio in Hollywood, where more than 30 motion picture and video film production companies are presently set up for motion picture production.

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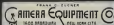
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(Continued from Page 251)

ment it seemed that love would triumph. The telecamerabull took a few steps towards her, bringing down a shelfful of china amid loud cheers. About 500 feet of film had been shot of the incident. Out of this some 35 feet showed real action and that footage, combined with previously shot cut-ins, made a convincing sequence in the final film.

In hammering out details for the historical side of china making, there were fortunately many old photos available, and it was easy enough to recapture the atmosphere of the china factory of past years.

Perhaps the most difficult of all sequences to film successfully was one showing a succession of famous pieces of Worcester China from 1751 to the present day. Mostly the pieces were shown being used or handled by people of the period. One dinner service, ordered by King George III in 1780, was filmed in a house in Curzon Street, London, which was furnished and decorated in the exact style of the period. Handling a service supplied in 1945 to the Indian Maharajah of Baroda, was a charming Anglo-Indian girl, 16-year-old Isabel Muzumdar, while to end this sequence special shots were obtained of a set of china presented to Princess Elizabeth by the citizens of Worcester, when she married the Duke of Edinburgh in 1947.

For the shots where china plates and ornaments appeared alone, almost every camera trick was employed to bring movement and interest to these otherwise static objects. Rotating turntables, lighting changes, tracks, superimpositions—all were used, and what might easily have been little more than an illustrated catalogue has been turned into a swift moving attention-holding sequence.

"The Doctor Ordered Clay" was filmed throughout with London-made Model "G" Newman Sinclair 35mm motion picture camera, using Mole-Richardson lighting equipment and occasionally Photofloods for special shots. Polaroid filters proved invaluable in overcoming distracting reflections when filming closeups of highly glazed china figures. All sound was post-synchronized, although many sequences were designed so that the picture holds attention and is self explanatory, requiring only suitable mood music.

As much camera movement as possible was introduced into the scenes at the factory, and a rubber-tired truck running on wooden rails, laid in what seemed to be all the most difficult places,

helped to make these smoothly and easily.

But there were difficulties. Parts of the factory are very old, and in one grinding room where a high angle shot was needed, the rafters up near the roof were covered with inches of white powdered clay, which penetrated lenses and magazines, quite apart from noses, eyes and most other parts of the body. Eventually after long waits for the powder to settle, the shots were successfully made. But it was many hours before equipment was cleaned and ready for the next set up.

Main feature of the factory scenes is a superb statuette of Princess Elizabeth on horseback, in her uniform of Colonel-in-Chief of the Grenadier Guards. Shown in detail is how the figure is first modelled, then cut into fourteen pieces for mould making, and finally assembled, fired and painted. Only one hundred of these statuettes will ever be made, thus assuring their value as a collector's piece in the years to come.

Near the end of the film the spirit of Dr. Wall returns to see with amusement the Worcester Porcelain Factory of today. The final scenes were shot in historic Bath Abbey, where Dr. John Wall is buried. Because gas is still used in the Abbey for illumination, special cables were run in from adjacent buildings and carefully concealed in the central heating ducts in the floor, to power our photo lamps. Tracks were laid for almost the full width of the Abbey in order to photograph a visitor as she

ADV.



"That's Northwest—they found out he was a KIBBER!"

(Looking north: northwest square reads)

welted down the side and finally stopped to look at Dr. Walla memorial.

Produced for a modest budget but making full use of natural settings and local talent, "The Doctor Ordered Clay" has been accepted for theatrical showing over the Associated British Cinema circuit, the largest British chain of theatres. In the U.S.A., 12mm copies will be distributed from the New York headquarters of the Worcester Royal Porcelain Company. By far the greater part of the output of English Bone China from Worcester comes to the United States.

"The Doctor Ordered Clay" should stimulate even more interest in Worcester Royal ware, showing as it does not only how its manufacture began, 300 years ago, but also the skill and craftsmanship which still goes into the making of every piece today.

FILM LEADER

(Continued from Page 34)

has been added in the eighth dark frame before the first frame of picture. This is used as an indication to TV directors that the picture will start within normal watching reaction time.

History and development of the leader began in January of 1950, when F. T. Boudich, SMPTE's Engineering Vice-president, decided that the information which had been submitted to him on the leader then generally in use warranted an investigation.

At first there was some feeling that a special television leader might be produced which would exist as a special-service standard and leave unmodified the old Academy Leader, but it was decided that unlooked-for problems could be avoided by a proper common-use leader design. From the beginning excellent cooperation was obtained from producers, laboratories, projectionists and broadcasters, resulting in the assurance on April 19, 1950, of the first sample leader (in card form) for limited comment and criticism.

Some feeling has been expressed that the leader is "hard to print." As compared with the drape of a drape of drape sometimes used for the old leader, it is somewhat more difficult. But any good laboratory can do a thoroughly acceptable job without difficulty, and the result is good dressing for a fine printing job.

Master positives of the leader, either 16mm or 35mm, for preparing drape negatives are available from the Society of Motion Picture and Television Engineers, 40 West 40th Street, New York 18, N. Y.

OUT OF THIS WORLD!

(Continued from Page 35)

you develop a kind of sixth sense that enables you to plan set-ups and lighting accurately in advance, so that actual time of execution on the set is cut to a minimum," he points out. "The cameraman owes a lot to the Art Director, also—because when sets are slumpy or unattractively designed, it's difficult to put quality into the photography. The best we can do is shoot around the set in such a way as to tone down the weak spots by shading the light off them, and build up the strong points by lighting them fully. It keeps you on your toes to make the most judicious use of what you have to work with. It was a pleasure to photograph 'Lost Continent,' however, because the sets were excellent."

Greenhalgh took time off from Hollywood during World War II in order to join the 5th Air Force in New Guinea. He was placed in charge of an echelon of the 5th Central Team shooting battle-action films. However, his serious casualty was suffered not on the battlefield, but on a Hollywood set. While shooting a charging stampede of 50 Indians for a film appropriately titled "Slaughter Trail," he was trampled by a mounted reindeer. In this skirmish he suffered a broken rib, a broken collarbone, and had his lung punctured by a bone fragment. As a result of this accident he was hospitalized for four weeks.

Greenhalgh recently photographed "Sword of Monte Cristo" (especially the first feature film to be shot in the new Eastman monochrome color negative). Other recent assignments include "Three Desperate Men," "New Mexico," "Miraculous Journey," "Burned Treasure" (filmed in Jamaica), and "Adventures of Casanova" (filmed in Mexico City). He has just completed photography of "FBI Girl," a slick spy thriller, also for Lippert Pictures.

UNIVERSITY TEACHING FILM

(Continued from Page 35)

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(Continued on Page 37)



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Current Assignments of A.S.C. Members



Major film productions on which members of the American Society of Cinematographers were engaged as directors of photography during the past month

★ ★ ★ ★

★ ★ ★ ★

Columbia

- * **PATRICK BRUCE**, "The Hunt of Wild River," with Charles Starrett, Sally Egan, and Jack Mulholland. Fred Sears, director.
- * **W. R. ROYCE**, "Duke" GARNER, "The Striped" with Anthony Quinn, Judy Lawrence, Anthony Quinn and Gale Robbins. Milton Ross, director.
- * **ELIAS CARTER**, "Sound Off" with Mickey Rooney, Delores Soderstrom, Sammy White, Gordon Jones, Pat Williams, and John Archer. Richard Quinn, director.
- * **WILLIAM SEALL**, "Beave Waiting" (Technicolor) with Jan Hall, Christine Lavin, Jay Silverheels and Michael ARNOLD. Spencer Bennet, director.
- * **CHARLES LANTIER**, "Capella Blood Relations" (Technicolor) with Louella Hayward, Patricia Medina, John Seaton, Genevieve Aulmont, Rex Evans, Charles Lewis, Male Gaudin and George GENE. Ralph Marbury, director.
- * **HENRY FREEDRIC**, "Crispale Creek" (Technicolor) with George Montgomery, Earle Boach, Bill Bishop, George Cleveland, Roy Roberts. Ray MURPHY, director.
- * **WILLIAM BRADGOTT**, "The Old West" with Gene Autry, Carl Davis, and Pat McGuire. George Archibald, director.

Independent

- * **JACK CARROLL**, "Admiral Quenn" (Rialto-Fruda), director in Belgium Congo, in Technicolor, with Humphrey Bogart, Katherine Hepburn and Robert Maury. John Korman, director.
- * **ERNEST LARSEN**, "Flame For Bedroom C" (Brunco Pictures) (Supernatural) with Gloria Swanson, James Warner, Milton Ross, director.

Lippert

- * **GEORGE ROBINSON**, "Adventures of Robin Hood" (Kane-Lippert Fruda) with Robert Clark, Mary Hatcher, Ben Welden, Wade Cowley, Wile Russell James Tinkling, director.

M-G-M

- * **RUSSET FLANCE**, "Bells of New York" (Technicolor) with Fred Astaire, Vera-Elton, Kathryn Wayne and Alton Parker. Charles Walters, director.
- * **WILLIAM BARNIER**, "Where Is Rome" (Shooting in Italy) with Van Johnson, Paul Douglas and Joseph Calleia. Clarence Brown, director.
- * **JOHN ALTON**, "The Easiest" with George Murphy, Nancy Davis, Lewis Stone and Billy Grey. David Bradley, director.
- * **PERCIBRE A YOUNG**, "Ivanhoe" (Shooting in London, in Technicolor) with Robert Taylor, Elizabeth Taylor, John Farrant, George Sanders, Robert Douglas, Fike Aymer and Finlay Currie. Richard Thorpe, director.
- * **CHARLES ROSSER**, "Schindler's List" (Technicolor) with Stephen Granger, Eleanor Parker, Mel Ferrer, Janet Leigh, Nina Foch,

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Henry Wideman, and Richard Anderson. George Selig, director.

- * **WILLIAM MILLER**, "Birth Aboy" (Technicolor), with Robert Williams, Joan Evans, Vernon Hume, Harry Hightman, Earle Brance, Sidney Landfield, director.
- * **JOHN RUTHERFORD**, "Young Man in A Hurry" with Russell Nype, Ruth Roman, Dennis Darnell, Nina Foch and Dames Corcoran. Mitchell Lebow, director.
- * **ROBERT SENTER**, "The Invitation" with Van Johnson, Dorothy McGuire, and Louis Calhern. Godfrey Rothland, director.

Meagron

- * **GIL WARRINGTON**, "Aladdin And His Lamp" with Patricia Madigan, Johnny Smith, Dick Brown and Billy House. Lee Landers, director.
- * **FRANK MILLER**, "Love Star Lovers" with Johnny Mack Brown, and Jimmy Hines. Lewis D. Collier, director.
- * **MARCEL LOFTICARD**, "Win, Place and Show" with Leo Gorcey, Stuart Hall, Gloria

Sanders, Allen Jenkins, Tim Ryan and Darr Smith. William Bradigan, director.

Paramount

- * **RAT REYNOLDS**, "The Deaver & The Grange" (Max Hodi Ford, Technicolor) with Edmund O'Brien, Sterling Hayden, Ross Hager, Lyle Butler, J. Carroll Nash, and Zasu Pitts. Byron Haskin, director.
- * **LEWIS CLARK**, "Shane" (Technicolor) with Alan Ladd, Jesse Arthur, Van Heflin, and Brandon de Wilde. George Stevens, director.
- * **LEWIS CLARK**, "Green Gold of Nevada" (Pine-Thomas Prod., in Technicolor) with John Payne, Susan Morrow, William DeWitt, and Woodhead and Roscoe Ains. Edward Laing, director.
- * **HARRY WILD**, "Big Old Father" (Technicolor) with Bob Hope, Jane Russell, Roy Rogers and Trigger. Frank Tashak, director.
- * **GARRETT HARVEY**, "Somebody Loves Me" (Pineburg-Seaton Prod., in Technicolor) with Betty Hutton, Ralph Meeker, Robert Knott, Adelle Jerses and Eddie Brub.

R.K.O.

- * **HARRY STANBURY**, "I Want You" (Goldwyn Fruda) with Dana Andrews, Dorothy McGuire, Farley Granger, Peggy Dow, Robert Knott, Mildred Dunnock, and Kay Collins. Mark Robson, director.
- * **GEORGE DUKAKIS**, "Dry Without End" (Filmakers Prod.) with Ida Lupino, Robert Ryan, and Barbara Welling. Harry Hester, director.
- * **RAMONA HARKIN**, "The Big Sky" (Winchester Prod.) with Kirk Douglas, Dewey Martin, Elia Tolant, and Buddy Bae. Howard Hawks, director.
- * **NICHOLAS MINORCA**, "Road Agent" with Tim Hux, Richard Martin, Mary Jo Tania, Kenneth MacDonald. Leslie Schneider, director.
- * **WILLIAM B. SUTHER**, "The Korean Story" (Edmond-Grouper Prod.) with Robert Montgomery, Charles McGraw, and Lila Rose.

Republic

- * **WYNDON HOOD**, "The Quiet Man" (Technicolor) with John Wayne, Maureen O'Hara, Barry Fitzgerald, Victor McLaglen, and Ward Bond. John Ford, director.

20th Century Fox

- * **CHARLES G. CLARK**, "End of the Road" (Technicolor) with Richard Widmark, Constance Smith, Richard Boone and Jeff Hume. Joseph Newman, director.
- * **JOHN LUGNELL**, "Elspeth" with Clifton Webb, Anna Francis, Charles Dickford, Reginald Gardiner and Evelyn Varden. Henry Koster, director.
- * **KARL STRUM**, "How of Country" (Apricot Prod.) (Technicolor) with Jack Hoot, Male Powers, Bill Williams, and Lillian Branson. Harry Keller, director.
- * **LEO TOWN**, "Flood of St. Louis" with Dan Dailey and Joanne Dru. Herman James, director.

• **NOBERT BERNIERI, "Five Fingers,"** with James Mason and Michael Rennie. Joseph L. Mankiewicz, director.

• **LEON STOLBERG, "Walk Tall: The Son Shines Tall,"** (Technicolor) with Jean Peters, David Wayne, Hugh Marlowe, Nelson Eddy, Jerry Molenberg and Albert Dekker. Henry King, director.

• **MILTON KRASNER, "Flame Out From A Stranger,"** with Gary Merrill, Helen Westcott, Shirley Winters, Kenneth Wayne and Warren Stevens. Jesse Nagelstein, director.

• **ARTHUR E. ARNONE, "Bells Do Their Thing,"** (Technicolor) with Joanne Cole, Myrna Loy, Debra Fager, Margo Carmichael, Betty Humber, and Barbara Bates. Henry Levin, director.

• **LOUIS BELLAMY, "Rings Of The Tenth,"** with Dale Robertson, Richard Boone and Tom Tully. Delmer Daves, director.

Universal-International

• **JAMES CLAMBERG, "Bend Sin The River,"** with James Stewart, Arthur Kennedy, Julia Adams, Rank Radstone, Leni Sten, Jay C. Flippen, Henry Morgan and Sapiro Pichik. Alvin Harp, director.

• **MADRY GREENMAN, "Son Of An Echo,"** with Tony Curtis, Piper Laurie and Susan Cabot. Kurt Neumann, director.

• **CURT KISSE, "Breathless Beauty,"** (Technicolor) with John Lund, Joyce Hadden, Scott Brady and Cliff Wells. Budd Boetticher, director.

• **CARL GUTHE, "Francis Covers The Big Town,"** with Donald O'Connor, Nancy Goff, Yvonne DeCarle and Frances Arthur Labin, director.

Warner Brothers

• **JOHN BOYLA, "Carson City,"** (In color) with Randolph Scott, Raymond Massey and Richard Widmark. André de Toth, director.

• **THE MCCOY, "It'll See You In My Dreams,"** with Bette Davis, Danny Thomas, Frank Lawler and Mary Wickes. Michael Curtiz, director.

• **ROBERT BERKE, "Room For Two Men,"** with Cary Grant and Betty Drake. Norman Taurog, director.

• **RAYMOND DUBAY, "The Lion And The Horse,"** (Technicolor) with Steve Cochran and Ray Teal. Louis King, director.

UNIVERSITY TEACHING FILM

(Continued from Page 107)

work; translates a lot of things that have to be seen to be understood.

J. They cut down on the amount of teaching time. "Elbow teaching" has always been the rule at Duke, and it takes a lot of time to do it right.

The Duke movie program in anatomy is the most complete in the United States today. A Duke doctor is now at the Mayo Clinic setting up a similar program; another will launch one at the University of California's new medical school this Fall. A special Duke movie on the structure of the hand is now being distributed to all American medical schools. The program is supported by a grant from the National Foundation for Infants Paralysis, which group is distributing copies of the films.

Medical motion pictures aren't as easy as westerns or musicals, Dr. Markes says. "We leave out the dramatic details and sound effects," he explains. "We assume that the students are going to be interested. That's why they are in medical school." But Duke's movie makers have become experts at certain special effects. They've worked out shading techniques to show an individual muscle as it gradually becomes paralyzed.

Again, they wanted to show how the structures of the arm fit together. It's easier to show when you start at the surface and work down into the bone. But the wooden model they wanted to photograph was easier to put together than to take apart. So they filmed it being put back together with the camera turned upside down, and then simply reversed the film, end for end, when editing it. But they have become most skilled at the make-or-break kind of editing. "Just like all movies, ours are really made in the cutting room," Dr. Markes says. "The secret is in the editing—in knowing what we want to leave in or leave out and where we want to show it."

Dr. Markes has for several years been one of the leaders in all visual aids in medicine: colored slides, movies, models and drawings. He is a member of the motion picture committee of the Association of American Medical Colleges; advisor to the American Film Institute; and a member of the Motion Pictures of the American Academy of Anatomists. Whether it's slides or movies, there is always only one goal: to save time. "The only reason for ever teaching anyone anything is to save time," he says.

"INTEGRATION" PIONEER

(Continued from Page 107)

producer and his associates, with NBC's splendid production personnel and with the product's agency representatives, then I strongly recommend that we continue to "convert" and let the audience decide which program they prefer.

Certainly, when we went to work to meet the challenge of converting "The Big Story" from radio to television, the personnel of the Procter organization found no difficulty in working with and understanding the methods of the film people we brought in to do the pilot picture. Jerome Robinson of the Procter associates busied himself with casting, and Everett Rosenthal supervised production, handling costs and general preparation. The writer gave me a treatment he had written and I prepared a visual adaptation suitable to Ms. Procter.

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where we could get first-rate production help and savings designed to our taste. For a crew we used the same staff that had been associated with me in my eastern production work as an independent: George Webber on the camera; Michael Stifka, assistant cameraman; Jack Audele, production assistant; Arthur Rosenbloom, with whom I had worked on many wartime films at Astoria, left NBC-Fairbanks (newspaper) and joined us as editorial supervisor. (Today Art directs all film for Procter's "Big Story" and "Treasury Men in Action.")

There were many problems but they were solved as fast as they arose. Experiences of the movie crew were absorbed by the men from the radio field, and vice-versa. When we finished with the pilot film we could sincerely say that each man had contributed much more than merely a share, and we awaited "the word" from agency and sponsor. That "the word" was favorable is evidenced by the fact that today we are still doing "The Big Story" together.

Indirectly, the apprehension felt by Mr. Procter in the challenge of converting his "Big Story" to TV led to our adopting the "live-film" integration method. After the pilot film was completed, the agency wanted to do the show "live" since film production costs are higher than live. This posed a problem because essentially I was and still am a film stage director. I was not familiar with TV production other than film for television. However, I was anxious to try my hand at "converting"—to see how tough it would be for a director not experienced in live TV to make a go of it. Mr. Procter was sympathetic to my predicament—after all, we were all in the same boat. But it was obvious that a straight live studio show, with no actual location scenes, might lose the flavor of reality—of being "on the spot"—that had made the radio show a success. In short, the problem was one of bringing to the visual show the same scope possible on the radio through the use of words and sound effects alone. The limitations of TV were never more apparent.

After much discussion of the format and after much juggling of budgetary problems, we decided that we would not deviate from the manner of the pilot film production. Film can be edited, television cannot. It was decided to film the portions of the show that required us to establish for our audience that we were on the spot (in the city, at the newspaper office and at other locations called for by the story material).

Mr. Procter brought a station wagon and I designed mail, front and tailgate camera platforms. We purchased a set of special portable lights and cables

capable of giving brilliance with minimum handling, to enable us to film interior long shots in the newspaper offices or at other locations, using whatever space was at hand. We had to become portable, mobile and highly productive in a short space of time.

TV film reproduction quality was a major "must." We studied much film on TV and most of it was of poor transmission quality. As I have already pointed out, we had the additional problem of integrating and matching cuts, even closeups, from film to live or live to film, often right in the middle of a dialogue sequence. Due to our tight schedule we could not wait for ideal location conditions but had to shoot on sunny, rainy, dark or light days many sequences and scenes, that had to intercut. We had to shoot night scenes in bright sunlight and always by daylight because our two-day schedule did not allow for any delays. Yet we were determined that the effects, production quality and transmission quality would be of the best when the show was presented on television.

Being the film man in the "conversion" setup, this problem was naturally left in my hands. I worked very closely with George Webber, the cameraman, and with the laboratory officials at De Luxe we discussed the problems pro and con and arrived at certain operating standards to be followed on location and in the laboratory.

We studied the quality of our pilot film on closed circuits and found its transmission, as a film in total length, excellent. This picture had been shot under existing exterior conditions at the scheduled time of production (with no waiting for ideal conditions), and it had been balanced by the expert camera technique of Webber and subsequently the laboratory. But now we were faced with our real problem: the matching of film and live action as to lighting and transmission quality. This was the unknown quantity, and a lot of believability depended on it.

It was our plan that film should never be used as a filler—it should always advance the plot; and we insisted that the audience must not be aware of when we were on film or on "live," because we did not want the story value damaged by an awareness of technical changes. These decisions, made over two years ago, with no standards in filming, laboratory, etc., to go by, might have been just so much wishful thinking. That they did not turn out to be so is a tribute to the willingness of all parties concerned to work together in closest harmony, from cameraman to laboratory technical to TV electronics engineer.

The next step we had in mind was a
(Continued on Page 32)

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(Continued from Preceding Page)

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series of discussions with NBC's lighting
personnel, but since the show was several
months from its starting date and since
each lighting man works in a different
manner, such as in motion pictures, we
realized jointly that this was an issue to
be faced with each individual program
until we either balanced film and live
or fell on our faces trying.

We finally set out on the road, filming.
The pace followed in the actual shooting
of the film portions of "The Big Story"
set some sort of a record, I'm sure, for
movie production. Certainly it was a far
cry from the traditional location practice
of scheduling a few scenes for each day
and changing the schedule to meet
weather conditions. Two days of shoot-
ing, a day of travel for the crew.
The production assistant would leave
while we were still shooting and go on
to the next place to pick up the arrange-
ments made by our advance man. I
would fly or take a train, usually within
an hour or so after the last shot, to the
next town, go over locations, select
exact spots, get doubles and extras, meet
the next "reporter-actor" for that par-
ticular show, discuss plot all during the
intervening day while the camera crew
and driver travelled in the station wagon
towards that next location. Then two
more days of shooting. (In those days
larger portions of the "Story" were
filmed and required more time.) This
routine I followed regularly until our
show went weekly last March.

The week of the performance this
was the schedule: Monday through
Thursday—stage "Big Story" live por-
tions at our New York rehearsal hall,
Friday—black the scenes for camera
angles, stage dry run, dress rehearsal,
integrate film and finally go on the air
(strange-sounding description for a film
and for live action). Next morning
(Saturday) we would leave again for
a week of filming, return and stage
another show; then a week of script-
reading, set-design discussion, etc., stage
another show, and on the road again. It
was a rigorous schedule, but we felt
we were pioneering, and the results made
the efforts more than worthwhile.

To us, at least, our success with "The
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important point is that quality trans-
mission of film on television is entirely
feasible, and the possibility of smoothly
integrating film and live action is far
beyond the stage of conjecture. It is a
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with an open mind, and a desire to co-
operate with the creative and technical
minds and hands coming today in radio,
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is your camera.
Choose wisely!

A movie camera, however simple it is to operate, is not a simple instrument. A camera must move film—step it—expose it—move it on and repeat the whole process anywhere between 16 and 64 times every second. To build a camera that will perform these complex operations perfectly requires painstaking design, the most conscientious workmanship. In other words, quality is the first thing to look for in choosing your camera.

And the best place to find camera quality is in these 16mm magazine-loading Bell & Howell cameras. Here are some specific features that will help you make better, more ambitious films.

Overused for life. During life of the product, any defect in workmanship or material will be corrected free.

You buy for life when you buy

Bell & Howell



B&H Auto Load...

16mm magazine loading camera with 1 inch f/2.5 Fluocoated lens, \$169.95

Simple magazine loading lets you load film in quickly—interchange in real time without fiddling a single frame.

Five operating speeds... you can shoot from a car, slow down sport scenes, prepare for ending scenes. Speeds are precisely calibrated at 16 (normal), 36 (sound), 32, 48 and 64 (slow motion) frames per second.

Built-in exposure guide provides a help for making correct exposures. Comes in mighty handy when you've forgotten your light meter or are simply in a hurry to start shooting!

Forster Viewfinder always shows you exactly what you'll get on the screen. It eliminates "miscalculation"—cutting off a vital part of the scene.



B&H Auto Master

16mm magazine loading turret camera with 1 inch f/2.5 lens only, \$249.95

3-lens Auto Master turret gives you instant camera choice of lenses. With the viewfinder objective rotating 180 degrees, with each lens you're ready to shoot with any lens instantly. You'll use the turret to add variety to all of your films!

(The Auto Master has all of the features of the Auto Load.)

Starting a lens family of your own...



7 inch f/2.5 (f/2.5)
Extremely Wide Angle View—accentuates distance \$89.95



1 inch f/1.4
Gives perspective of two men eye—extremely fast \$179.95



2 inch f/1.6 (f/1.6)
Medium telephoto—perfect for indoor telephoto work \$179.95



2.8 inch f/2.5 (f/2.5)
Telephoto—7 stopped for exact light measurement \$229.95



4 inch f/2.5 (f/2.5)
Powerful Telephoto—for use under extreme lighting \$269.95

You choose a lens for what it does... wide angle, telephoto or perhaps a lens that is simply fast. BUT—don't assume just any lens will perform its primary function, which is to transmit to the film a clear, well defined image with the color values just right. And the quality of every member of this lens family is second to none in the movie field.

Prism coated lenshells without color

Give your
Auto Load
a 3 lens turret...



at this new low price. Now your Auto Load can have all the versatility offered by the Auto Master 3 lens turret, but only \$29.95! This special price includes installation but not extra lenses. Price returns to \$15 September 1, 1961. See your authorized Bell and Howell dealer today.